A NEW SPECIES OF *NYCTIMYSTES* (ANURA: HYLIDAE) FROM THE STAR MOUNTAINS, PAPUA NEW GUINEA

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Nyctimystes oktediensis sp.nov. is a member of the *N. papua* group. Morphologically, it is similar to *N. disrupta* from which it can be distinguished by its brown iris, reduced finger webbing, and palpebral venation of vertical to oblique lines over most of the eyelid. *N. oktediensis* is a stream-dwelling species inhabiting lower montane rainforests in the rugged Ok Tedi headwaters region of western Papua New Guinea. □ *Hylidae, Nyctimystes oktediensis, new species, Papua New Guinea.*

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The montane hylid genus *Nyctimystes* is characterised by the presence of vertical pupils and palpebral venation (Zweifel, 1958). Twenty-three species are presently known, with 21 from the island of New Guinea (Zweifel, 1958; 1983), one species in northern Queensland, Australia (Czechura, Ingram & Liem, 1987) and another in the Moluccas.

Within *Nyctimystes* a distinctive, and presumably monophyletic, group of species has been referred to as the *N. papua* species group (Zweifel, 1983). Members of this group are moderate to large in size, have sparse or much reduced palpebral venation, lack a vocal sac in males, have short, high, rounded snouts, and the outer fingers are no more than one half webbed. Although Zweifel (1983) recognised only four species in the group, he was aware of several specimens that could not be allocated to any known species.

In November 1991, we surveyed the frog fauna of the upper Ok Tedi drainage basin on the southern slopes of the Star Mountains, central New Guinea. We collected 36 species, of which almost one half could not be allocated to any known taxon. The only *Nyctimystes* that we encountered was an undescribed member of the *N. papua* group. Our specimens were most similar morphologically to *N. disrupta* but had a brown iris, reduced webbing between the fingers, and less disrupted palpebral venation.

Measurements and terminology follow Zweifel (1983). Abbreviations used in the text are SV, body length from snout to vent; TL, tibia length; FT, foot length; HD, hand length; EN, eye to naris distance; IN, internarial distance; SN, snout to naris distance; HW, head width; EY, eye diameter.

Specimens are housed in the Queensland Museum (QM), South Australian Museum (SAM), Biology Department, University of Papua New Guinea (UP) and the American Museum of Natural History (AMNH).

Nyctimystes oktediensis sp.nov.
(Figs 1-3)

MATERIAL EXAMINED

HOLOTYPE: QM J56896 adult male with nuptial pads, collected by S.J. Richards & G.R. Johnston at 1625m, 23 November 1991 on the southeastern slopes of Mt Akrik, Star Mountains, Western Province, Papua New Guinea (5°10'S, 141°10'E).

PARATYPES: QM J56897-8, SAM R40771 three adult males with nuptial pads, same data as holotype but collected on November 24, 1991; UP 5137-9, three adult males with nuptial pads collected by D. Hyndman, 16 February 1975, from a stream adjacent to the Bleit Bit hunting lodge at Karnfon (2200m), Kam Valley, Star Mountains, Western Province, Papua New Guinea.

DIAGNOSIS

Nyctimystes oktediensis is distinguished from its congeners by a combination of the following characters: palpebral pigmentation relatively sparse; males without vocal sac; iris brown in life; fingers less than half webbed; tympanum indistinct but visible, moderately large size (males 60.8-67.2mm SV).

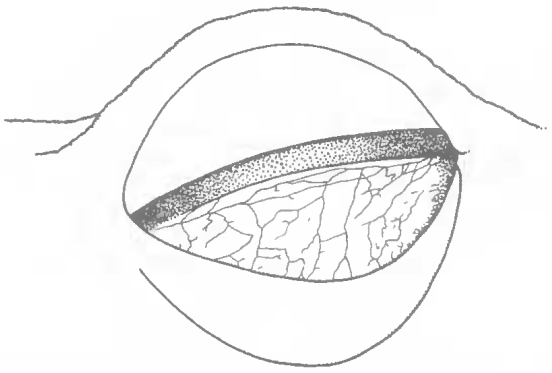

FIG. 1. Right eye of *Nyctimystes oktediensis* (holotype) showing palpebral venation.

DESCRIPTION OF HOLOTYPE

Adult male with the following measurements and proportions: SV 60.8; TL 35.8; HW 21.8; EY 7.8; EN 5.0; IN 6.5; SN 3.5; HD 24.0; FT 32.1; width of third finger disc 4.4, width of third penultimate phalanx 2.7; width of fourth toe disc 3.8, width of fourth penultimate phalanx 3.0; TL/SV 0.588; HW/SV O.358; EN/SV 0.082; EY/SV 0.128; IN/SV 0.106; EN/IN 0.769.

Snout short, high, rounded in dorsal view, almost vertical in lateral view; canthus rostralis distinct, slightly curved; loreal region steep, slightly concave; nostrils directed laterally (quite evident in dorsal aspect), internarial distance distinctly greater than distance from eye to naris (EN/IN 0.769). Pupil vertical. Palpebral pigmentation of vertical to oblique lines over entire eyelid, with few broken, interconnecting horizontal lines, slightly weaker posteriorly (Fig. 1). Tympanum indistinct but visible, dorsal one quarter of tympanic annulus hidden by postocular fold. Vocal sac absent. Vomerine teeth in two transverse rows between the internal nares.

Relative lengths of fingers 3>4>2>1; scanty webbing between third and fourth fingers, reaching halfway to distal subarticular tubercle on fourth, and to proximal tubercle on third; subarticular tubercles single; disc of third finger more than half eye diameter. A finely granular nuptial rugosity on inside of first finger. Relative lengths of toes 4>5=3>2>1, webbing almost to discs on all toes except fourth, fourth toe webbed to just short of distal subarticular tubercle; subarticular tubercles rounded, single; a low, oval inner metatarsal tubercle but no outer one (Fig. 2).

Dorsal surfaces slightly rugose, without conical asperities. A strong fold from posterior corner of eye to above arm insertion. Ventral surfaces granular. No heel lappet. Dorsally olive green. Lateral surfaces mottled olive gold and dark brown. Limbs and back (posteriorly) with a mozaic of olive green patches edged with dark brown, and interspersed with olive gold tending to form bands across the limbs. Venter speckled with cream and grey, iris brown (Fig. 3).

VARIATION

The smallest specimen, the holotype, has more widely spaced nares than the paratypes (EN/IN 0.769 vs 0.800-1.00). While the palpebral venation is similar in all of the type series, there is some variation in the degree to which the oblique lines are interconnected horizontally, and the venation of one specimen (QM J56898) is scarcely detectable on the posterior one quarter of the right eyelid (clearly visible on left eyelid). Proportions of the paratypes are as follows: TL/SV 0.583-0.627; HW/SV 0.342-0.356; EN/SV 0.080-0.087; EY/SV 0.110-0.127; IN/SV 0.082-0.100; EN/IN 0.800-1.00.

COMPARISON WITH OTHER SPECIES

The reduced palpebral venation, lack of a vocal sac, snout shape, basal finger webbing and size of *N. oktediensis* show that it is a member of the *papua* group defined by Zweifel (1983). However, *N. papua* is a much smaller species, with females smaller or about the same size as male *N. oktediensis*, and has only a few flecks of black pigment in the anterior corner of the lower eyelid (Menzies, 1975; Zweifel, 1983). Even allowing for greater variation when additional specimens are collected (see Zweifel, 1983), palpebral venation of this species is unlikely to approach the state of *N. oktediensis*. *N. trachydermis* is larger than *N. oktediensis* (smallest male *N. trachyder-*

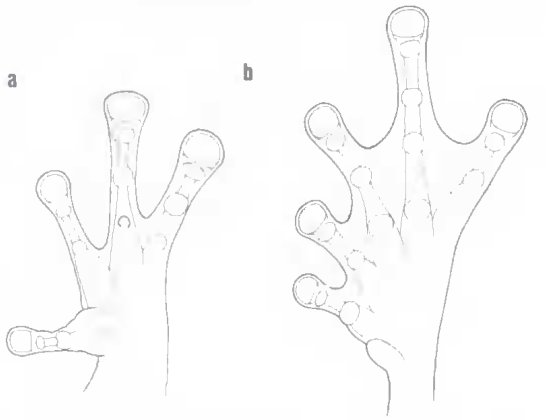

FIG. 2. Left hand (a) and foot (b) of *Nyctimystes oktediensis* (holotype) in palmar and plantar view respectively.

FIG. 3. Holotype of *Nyctimystes oktediensis* in life.

mis 71.6mm), has conical asperities on the dorsum, and a completely concealed tympanum. The sole specimen of *N. tyleri* (a male) is also much larger (78mm), and had a bright yellow iris (brown in *N. oktediensis*) in life (Zweifel, 1983). *N. disrupta* is similar in size to *N. oktediensis* but has a green iris in life, more extensive webbing between the fingers, and palpebral venation of very fine, disrupted lines (Zweifel, 1983).

Habits and Habitat

The Mt Akrik specimens were collected at night from branches overhanging the Ok Kun, a steep rainforest stream draining into the Ok Tedi. None was heard calling, and additional observations are required to determine whether this species can vocalise. At least four species of suctorial tadpoles were collected at this site, but we are unable to associate any of these positively with *N. oktediensis*.

Distribution

Currently known only from the Star Mountains in central New Guinea.

Etymology

Named for the rugged upper Ok Tedi drainage basin where all of the types were collected.

REMARKS

Zweifel (1983) discussed several samples of *N. disrupta*- like specimens that he was unwilling to assign to any known taxon. All of these have finger webbing typical of *N. oktediensis* but most show characters distinguishing them from this species. Two specimens from Irian Jaya (AMNH 49671, 49674) are quite distorted, making accurate measurements impossible, and we are unwilling to assign these to *N. oktediensis* without fresh material. An adult male from Telefomin (AMNH 114817) agrees well with the type series, although the colour of the iris in life is unknown, and we tentatively assign this specimen to *N. oktediensis*. Specimens from Okefomin (AMNH 11485-6), Ialibu (AMNH 81025-6), and Wagau (AMNH 74816-7) have much less palpebral venation than *N. oktediensis*. A series of adult males from Nipa, Southern Highlands (AMNH 103184-8) are large (to 72mm), extremely rugose dorsally (but without conical asperities), and have a completely hidden tympanum. They clearly represent a species distinct from *N. oktediensis* and all other described *Nyctimystes*.

Hyndman & Menzies (1990) list two unassigned species of the *Nyctimystes papua* group from the Ok Tedi region. Their *N.*(?) *papua* (UP 6719) possesses a vocal sac and thus is not a member of this group. The specimens listed as *N.* cf *disrupta* (UP5137-9) agree with *N. oktediensis* in all respects, and are included in the type series.

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